

# **ADHD & Nutrition**





#### EXPLORING THE IMPACT OF PROBIOTICS ON ADULT ADHD MANAGEMENT THROUGH A DOUBLE-BLIND RCT

Levy Schwartz, M ; Magzal, F ; Yehuda, I ; Tamir, S Scientific reports. 2024;14(1):26830

Attention Deficit Hyperactivity Disorder (ADHD) affects 3-4% of the adult population. Dysregulation of the bidirectional relationship between the gut microbiota and the central nervous system has been shown to contribute to ADHD symptoms. The aim of this study was to test the effects of a multi-strain probiotic (Lactobacillus helveticus, Bifidobacterium, animalis ssp. lactis, Enterococcus faecium, B. longum and Bacillus subtilis 8x109 colony-forming units) on ADHD symptoms, academic achievements, fingernail cortisol concentrations, gastrointestinal (GI) symptoms, and sleep quality of adults. This was a doubleblind, randomised control trial of 67 students aged 19-30 years given either multi-strain probiotic or placebo for 3-months. The results showed that probiotic intervention decreased hyperactivity, which was especially prominent in individuals who were classified as "low functioning". Academic achievement and gastrointestinal symptoms were also improved. Younger individuals were shown to benefit the most from probiotics. Measures of fingernail cortisol levels showed that lower levels were associated with lesser symptoms of inattention and hyperactivity. The authors concluded that probiotics have a beneficial effect on ADHD symptoms, but more work is needed on the influence of individual strains on clinical outcomes in ADHD.

# THE ASSOCIATION BETWEEN MATERNAL TOBACCO SMOKING DURING PREGNANCY AND THE RISK OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD) IN OFFSPRING: A SYSTEMATIC REVIEW AND META-ANALYSIS

Mohammadian, M ; Khachatryan, LG ; Vadiyan, FV ; Maleki, M ; Fatahian, F ; Mohammadian-Hafshejani, A PloS one. 2025;20(2):e0317112

Attention deficit hyperactivity disorder (ADHD) is a condition of mixed aetiology, with genetic and environmental factors involved. Smoking during pregnancy has been implicated in ADHD development, however the research is conflicting.

This study aimed to investigate the association between maternal tobacco smoking during pregnancy and ADHD risk in offspring. This was a systematic review and meta-analysis of 55 case-control, cross- sectional, and cohort studies, conducted worldwide from 1998-2024, containing over 4 million individuals.

The results showed an association between maternal tobacco smoking during pregnancy and increased risk of ADHD in offspring. The authors concluded that the integration of smoking cessation into prenatal care may help to reduce the risk of ADHD development in offspring. Further research is needed to understand the biological mechanisms involved.



### THE EFFECTS OF PHYSICAL ACTIVITY ON MENTAL HEALTH IN ADOLESCENTS WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER: A RANDOMIZED CONTROLLED TRIAL

Liu, C ; Yang, Y ; Wong, SH ; Leung, A ; Sit, CH The international journal of behavioral nutrition and physical activity. 2025;22(1):47

Rates of mental health issues amongst children and adolescents with Attention Deficit Hyperactivity Disorder (ADHD) exceed those found in their neuro typically developing peers. Physical activity (PA) has been shown to have promising results on the mental health of children and adolescents with neurodevelopmental differences.

This study aimed to determine if aerobic PA could positively affect various mental health outcomes in adolescents with ADHD. This was an assessor-masked multicentre randomised controlled trial of 80 adolescents aged 12-17 years who were assigned to either 60minute aerobic PA sessions or control for 12 weeks.

The results showed that exercise significantly improved depression, anxiety, and stress. Positive effects on depression, anxiety, and stress were sustained for three months post-intervention. Resilience was improved with exercise; however, aggression was unaffected. The authors concluded that aerobic exercise benefitted both internalising mental health problems i.e., depression, anxiety, and stress but had no effect on externalising problems i.e., aggression





## SYSTEMATIC REVIEW AND META-ANALYSIS: RELATIVE AGE IN ATTENTION-DEFICIT/ HYPERACTIVITY DISORDER AND AUTISM SPECTRUM DISORDER

Frisira, E ; Holland, J ; Sayal, K

European child & adolescent psychiatry. 2025;34(2):381-401

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental condition, which is usually diagnosed in childhood. Children who are young for their year at school have been shown in previous studies to be overrepresented amongst children with an ADHD diagnosis. Children who are young for their year could exhibit inferior language and social skills compared to older peers, and present as ADHD. The aim of this study was to examine the influence of age on the rating of ADHD symptoms by teachers and parents. This was a systematic review of 32 worldwide studies of children and adolescents, with 21 submitted for meta-analysis.

The results showed that according to teacher ratings, younger relative age was associated with ADHD diagnosis and medication. This equates to children of a younger relative age to their peers, being 38% more likely to receive an ADHD diagnosis. In contrast parent ratings showed no or weak associations with relative age. The authors concluded that teacher ratings of ADHD are more likely to be driven by relative age than parent ratings.

